

Pentacomia cupricollis
and descriptions of two related species
from Bolivia

(Coleoptera, Cicindelidae)

Jürgen WIESNER*

Abstract

Pentacomia (Poecilochila) brzoskai sp. n. and *Pentacomia (Poecilochila) pearsoni* sp. n. are described. They may be distinguished primarily by the shape of the aedeagus and the female mesepisternum and secondarily by a different coloration of legs, labrum and antennae. For *Pentacomia cupricollis* KOLLAR, 1836, a lectotype is designated.

Cicindela cupricollis was described by Vinzenz KOLLAR (1836) based on specimens collected by Johann NATTERER in Province Ypanema/Brazil. There are two specimens in the collection of the Museum of Natural History, Vienna, briefly described later on in the text, which seem to be the basis for the original description by KOLLAR. Later, Walther HORN (1926, p. 122) placed the species *cupricollis* into the genus *Odontocheila* CASTELNAU, 1834, and expanded its known geographical range from São Paulo, Mato Grosso to Minas Gerais and Paraguay. The genus *Odontocheila* was revised by Emile RIVALIER (1969), and he transferred (p. 226) *cupricollis* to the genus *Pentacomia* BATES, 1872, and within this to the new subgenus *Poecilochila*. Recently I received for study from David L. PEARSON a series of tiger beetles similar to or identical with *Pentacomia cupricollis*, which had been collected by himself and several colleagues in Bolivia. In addition to this material, I extended my study of this taxon by including specimens from other collections.

Material from the following collections was examined:

DBC	David BRZOSKA collection, Lawrence, Kansas/U. S. A.
DEI	Deutsches Entomologisches Institut, Eberswalde/Germany
DPC	David PEARSON collection, Tempe, Arizona/U. S. A.
JWC	Jürgen WIESNER collection, Wolfsburg/Germany
NHMW	Naturhistorisches Museum, Vienna/Austria
RHC	Ronald HUBER collection, Prairie Village, Kansas/U. S. A.

My investigations revealed the following results: the specimens from Bolivia were seen to belong to three different species of a *cupricollis*-complex (Fig. 1). First, in central Santa Cruz Department, *P. cupricollis* itself, the smallest of the three (Fig. 22); second, in eastern Santa Cruz at the border of the Pantanal, *P. brzoskai* sp. n., the largest of the three; and third, the middle sized *P. pearsoni* sp. n., from western Santa Cruz and Beni Department. Color of specimens within each species varies significantly. Pertinent characters and the range of their variance are shown in Table 1, followed by the description of the species.

* 64th contribution to the knowledge of Cicindelidae.

Description

Body length 7.2 to 9.3 mm, mean 8.2 mm (n = 58); dorsally of bright copper color, with metallic dark blue along the lateral margin of the elytra, at genae and between eyes; ventral and dorsal thorax bright metallic copper except for a metallic blue line on the lateral edge of the pronotum; ventral abdomen metallic dark blue towards the posterior and sometimes coppery to the anterior, except for the bright metallic copper metepisternum. Mandibles brownish-black with yellow margin and 4 teeth. Labrum (Figs 13-15) with four lateral setae, yellow with or without darkened areas, in few cases black with a yellow mark at the lateral edge. Palpi light orange, apical joint black. Coloration of antennae light orange, orange with metallic lustre or black. Mesepisternum of female (Figs 10) smooth, with a longitudinal furrow and a distinct pit at its center. Elytra (Figs 2 and 3) with two distinct semicircular white spots on the lateral margin of the elytra (middle and apical), the middle spot mostly large, sometimes small and in few cases absent. Legs orange with or without metallic lustre. Length of aedeagus (Fig. 7) 3.0 mm, tip not curved, nearly straight.

Diagnosis. The smallest of the three species discussed herein. The aedeagus is also the smallest. The smooth female mesepisternum shows a distinct pit, lacking in the other two species. Color of appendices is primarily orange. Elytral maculation consists generally of two white spots.

Type material. Lectotype, male, herewith designated. Type labels: "N. c., Y." [green and hand-written]; "LECTOTYPE, *Pentacomia (Poecilochila) cupricollis* KOLLAR, 1836, ded. J. WIESNER 1999" [red and printed]. Paralectotype, female, here designated. Type labels: "N. c., Y." [green and hand-written]; "Cupricollis, Brasil. Koll." [white and hand-written]; "PARALECTOTYPE, *Pentacomia (Poecilochila), cupricollis*, KOLLAR, 1836, ded. J. WIESNER 1999" [red and printed]. Type depository: NHMW. Type locality: Provincia Ypanema/Brazil.

Table 1: Distinguishing characters of *Pentacomia cupricollis*, *P. brzoskai* sp. n. and *P. pearsoni* sp. n.

Characters	<i>P. cupricollis</i>		<i>P. brzoskai</i> sp. n.		<i>P. pearsoni</i> sp. n.	
	male	female	male	female	male	female
1 Body length						
1.1 min	7.2	7.9	9.0	10.0	8.0	8.5
1.2 max	8.5	9.3	11.0	11.4	10.0	10.6
1.3 average	7.8	8.6	10.0	10.8	9.1	9.4
2 Coloration of antennae						
2.1 orange	x	x	x	x	-	-
2.2 orange with metallic lustre	x	x	x	x	-	-
2.3 black	x	x	-	x	x	x
3 Coloration of femora						
3.1 orange	x	x	x	-	-	-
3.2 orange with metallic lustre	x	x	x	x	-	-
3.3 black with orange spot at apex	-	-	x	x	x	x
4 White middle spot of elytra						
4.1 large	x	x	-	-	-	-
4.2 small	x	-	-	-	x	x
4.3 none	x	x	x	x	x	x
5 Coloration of labrum						
5.1 orange	-	x	x	-	-	-
5.2 orange, black at base	x	x	x	x	-	-
5.3 orange, black in the middle	x	x	x	x	-	-
5.4 black, orange at lateral edge	x	x	-	x	x	x
5.5 black	-	-	-	-	x	x



Fig. 1: Distribution map for *Pentacomia cupricollis* (●), *P. pearsoni* sp. n. (▲) and *P. brzokai* sp. n. (■).

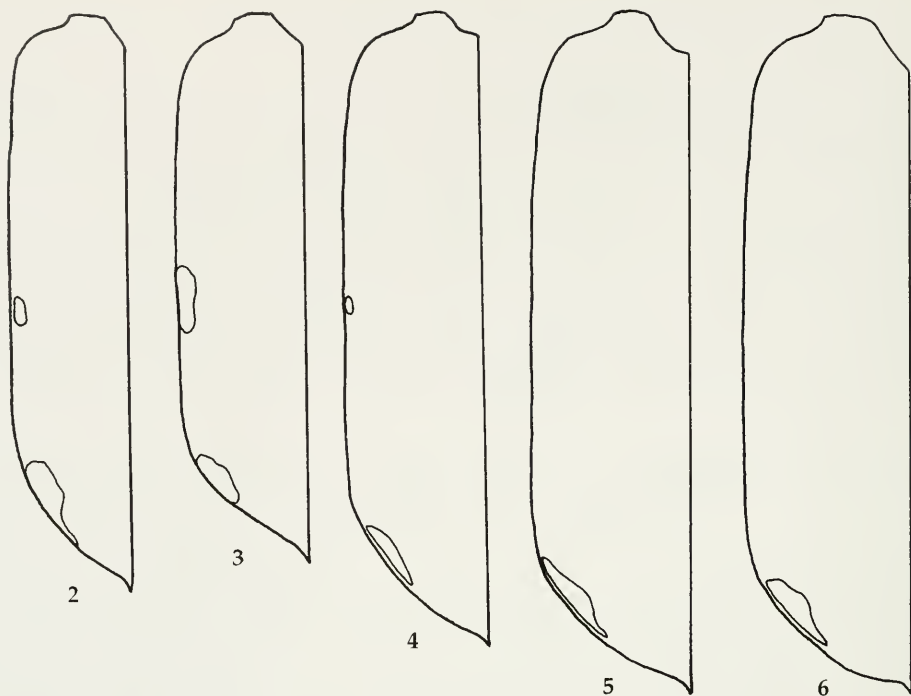
Additional material studied. 2♂♂, coll. O. LEONHARD (DEI); 1♂, Am. mer. (DEI); 1♂, Laguna, Santa (DEI); 2♂♂, 1♀, STAUDINGER, Pirais caba (DEI); 1♂, 3♀♀, STAUDINGER, São Paulo (DEI); 1♀, STAUDINGER, Cuyabá Mato Gr. (DEI); 1♂, V/06, São Paulo, HAAS (RHC); 1♀, Mato Grosso, Vacaria, XII/22 (DEI); 1♀, Villarrica/Paraguay, 23/XII/23 (DEI); 1♀, Paraguay, 10/II/24 (DEI); 1♂, 1♀, Paraguay, XII/79, Depto. Concepcion, Tacuati (JWC); 1♂, San Pedro, Cororo – Rio Ypane/Paraguay 24-26/XI/83, M. WASBAUER coll. (RHC); 1♀, Santa Cruz, San Ignacio/Bolivia, (365m), 26/XII/89, E. PANARANDO; scrub forest path, Velasco, 16°21'S, 60°55'W (DPC); 1♀, l. c., E. VARGAS (DPC); 1♂, l. c., (RHC); 1♂, Santa Cruz, San Jose/Bolivia (309m), 29/XII/89, E. PANARANDA; scrub forest path, Chiquitos, 18°11'S, 60°46'W (RHC); 1♂, 1♀, l. c., 30/XII/89 (DPC); 2♀♀, l. c., F. GUERRA (DPC); 2♀♀, l. c., S. Otazu (DPC); 11♂♂, 5♀♀, Paso Yobai, Dep. Guaira/Paraguay 14/XII/90, leg. U. DRECHSEL (JWC); 1♂, 1♀, Dep. Amambay, P. N., Cerro Cora/Paraguay, 5-9/XII/91, leg. U. DRECHSEL (JWC); 2♀♀, Santa Cruz/Bolivia, 10 km NW San Ignacio, 13/XII/93, D. L. PEARSON; cerrado forest path, Velasco, (DPC); 3♂♂, 2♀♀, Dep. Amambay, P. N., Cerro Cora/Paraguay, 16-20/XII/93, leg. U. DRECHSEL (JWC); 1♀, Capiata/Paraguay 21/II/94 (JWC); 1♀, Naranjo/Paraguay, 1/IV/95 (JWC).

Distribution. Brazil: Mato Grosso, São Paulo. Paraguay. Bolivia: Santa Cruz.

Pentacomia (Poecilochila) pearsoni sp. n.

Description

Body length 8.0 to 10.6 mm, mean 9.2 mm (n = 150), dorsal head and elytra dark copper color, with metallic blue green or dark blue along lateral margin of elytra, dark blue at genae and dark green between eyes; ventral thorax dark copper and dorsal thorax brass color except for a metallic blue line on lateral edge of pronotum; ventral abdomen metallic blue green, except for brass colored metepisternum. Mandibles black with yellow margin and 4 teeth. Labrum (Figs 16 and 17) with four lateral setae, black, in few cases black with a lightened area at the lateral edge. Palpi light orange, apical joint black. Coloration of antennae black, basal four joints with blue lustre. Mesepisternum of female (Fig. 11) smooth, with a longitudinal furrow. Elytra (Figs 4 and 5) with one or two distinct white spots on the lateral margin of elytra (middle and apical), middle spot always much smaller than apical spot, frequently completely absent. Legs black to brownish black with a yellow spot at each femoral apex. Length of aedeagus (Fig. 8) 3.4 mm, tip curved and broadly rounded.

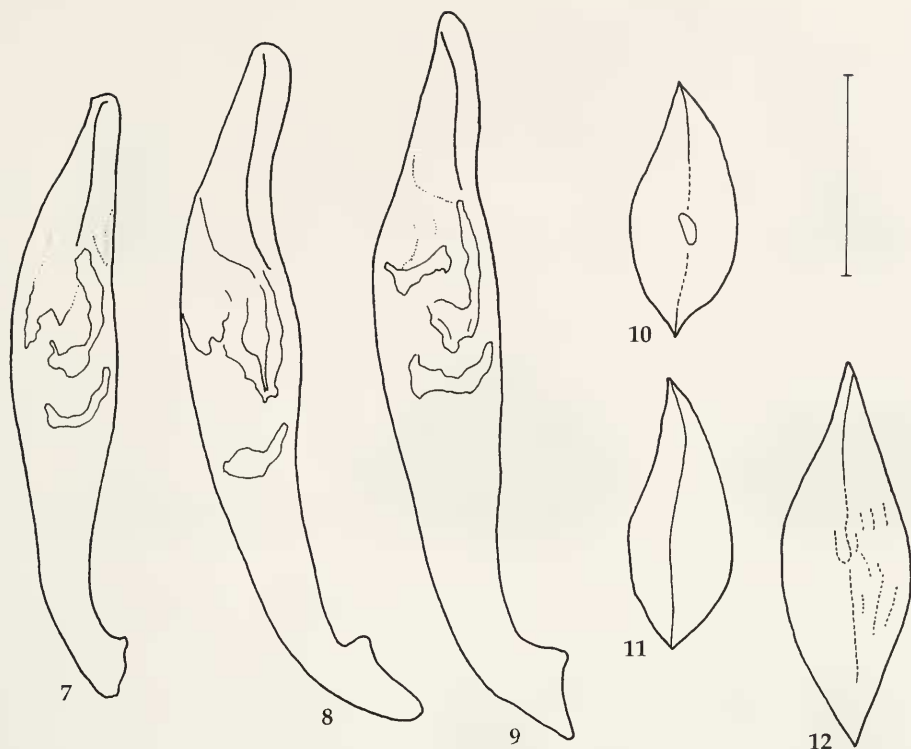


Figs 2-6: Left elytron. 2. *Pentacomia cupricollis*, N. c., Y., Paralectotype ♀ (NHMW). 3. *P. cupricollis*, Santa Cruz/Bolivia, San Jose (309m), 30/XII/89, E. Panaranda; scrub forest path, ♂, (DPC). 4. *P. pearsoni* sp. n., Beni/Bolivia, 68.7 km SW Santa Rosa, 23/XI/94, BRZOSKA/GUERRA, Paratype ♀, (DPC). 5. *P. pearsoni* sp. n. Santa Cruz/Bolivia, 24 km S San Javier, 280m, 6/XII/95, D. BRZOSKA, paratype ♂, (DBC). 6. *P. brzoskai* sp. n., Santa Cruz/Bolivia, 22 km W Pto. Suarez, 31/XII/93, J. F. GUERRA; secondary forest path, Paratype ♂, (DPC). Scale: 1 mm.

Diagnosis. The intermediate of the three species, discussed here. The antennae are completely black. The smooth female mesepisternum shows nothing more than a longitudinal furrow. Color of labrum is mostly black, in very few cases yellow at lateral edge. Color of appendices is mostly black. Elytral maculation consists of one apical spot only or occasionally one apical spot and a small middle spot.

Holotype and type locality. Male, labelled "BOLIVIA – SANTA CRUZ, 18.7 km N – San Ramon, 315 m, 29-XI-1995, David BRZOSKA" [white and printed]; "HOLOTYPE, *Pentacomia (Poecilochila) pearsoni* sp. n., ded. J. WIESNER 1999" [red and printed]. Type locality: Santa Cruz/Bolivia.

Paratypes. 149 paratypes with red printed labels "PARATYPE, *Pentacomia (Poecilochila) pearsoni* sp. n., ded. J. WIESNER 1999" and the following additional labels [white and printed]: 1♂, 2♀♀, Santa Cruz/Bolivia, 2 km NW – San Javier, D. BRZOSKA, 22/XII/92, Nuflo de Chavez, 16°19'S, 62°34'W; 1♂, Santa Cruz/Bolivia, 27 km S San Javier, 24/XI/92, F. GUERRA; secondary forest floor, Nuflo de Chavez, 16°33'S, 62°35'W; 11♂, 11♀♀, Santa Cruz/Bolivia, 13 km S San Javier, D. BRZOSKA, 24/XI/92, Nuflo de Chavez, 16°26'S, 62°34'W; 2♂♂, 1♀, I. c. F. GUERRA; open cerrado forest; 8♂♂, 4♀♀, Santa Cruz/Bolivia, 23.6 km S San Javier, D. BRZOSKA, 24/XI/92, Nuflo de Chavez, 16°32'S, 62°35'W; 1♂, 1♀, Santa Cruz/Bolivia, 15 km E San Javier, 12/XII/93, D. L. PEARSON; secondary forest clearing, Nuflo de Chavez, 16°20'S, 62°27'W; 11♂♂, 3♀♀, Santa Cruz/Bolivia, 10 km E San Javier, 12/XII/93, D. L. PEARSON; secondary forest path, Nuflo de Chavez, 16°26'S, 62°41'W; 1♀, Santa Cruz/Bolivia, 46 km NE San Ramón, 1/I/94, J. F. GUERRA; secondary forest path, Nuflo de Chavez, 15°46'S, 61°19'W; 21♂♂, 22♀♀, Beni/Bolivia, 68.7 km SW Santa Rosa, 23/XI/94, BRZOSKA/GUERRA, Ballivia, 14°40'S, 67°02'W; 1♂, Santa Cruz/Bolivia, Rio Surutu, 3 km SE, Buena Vista, 325 m, D. BRZOSKA, 24/XI/95, Ichilo, 17°24'S, 63°39'W; 4♂♂, 3♀♀, Santa Cruz/Bolivia, 2.5 km E San Carlos, 320 m, Camino, Cochabamba, km 109, D. BRZOSKA 25/XI/95, Ichilo, 17°24'S, 63°45'W; 1♀, Santa Cruz/Bolivia,



Figs 7-9: ♂ Aedeagus. 7. *Pentacomia cupricollis*, Dep. Guaira, Paso Yobai /Paraguay, 14/XII/90, leg. U. DRECHSEL, (JWC). 8. *P. pearsoni* sp. n., Santa Cruz/Bolivia, 24 km S San Javier, 280m, 6/XII/95, D. BRZOSKA, Paratype (DPC). 9. *P. brzoskai* sp. n., Santa Cruz/Bolivia, 4 km SW Pto. Suarez, 30/XII/93, J. F. GUERRA; secondary forest path, paratype, (DPC).

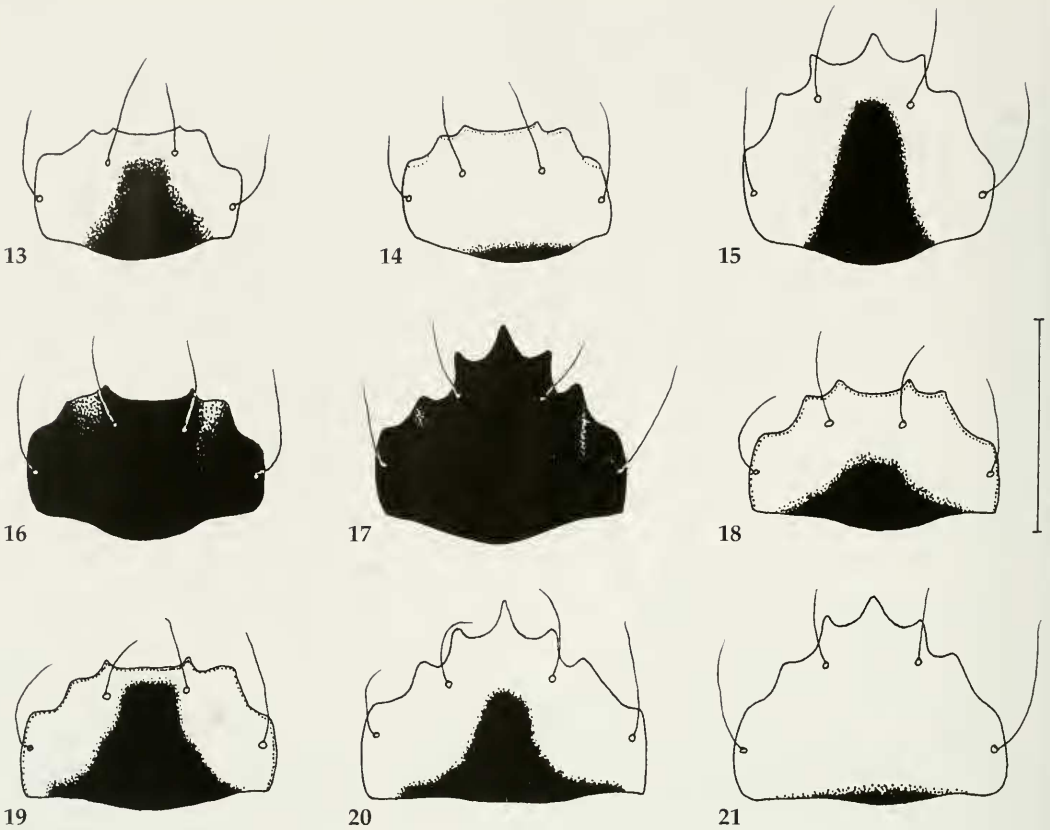
Figs 10-12: ♀ Mesepisternum. 10. *Pentacomia cupricollis*, Paraguay, 10/II/24, (DEI). 11. *P. pearsoni* sp. n., Santa Cruz/Bolivia, 30.5 km S San Javier, 315 m, 6/XII/95, D. BRZOSKA, Paratype (DBC). 12. *P. brzoskai* sp. n., Santa Cruz/Bolivia, 22 km W Pto. Suarez, 31/XII/93, J. F. GUERRA; secondary forest path, paratype (DPC). Scale: 1 mm.

30.5 km S San Javier, 315 m, 6/XII/95, D. BRZOSKA, Nuflo de Chavez, 16°35'S, 62°35'W; 9♂♂, 12♀♀, Santa Cruz/Bolivia, 24 km S San Javier, 280 m, 6/XII/95, D. BRZOSKA, Nuflo de Chavez, 16°32'S, 62°35'W; 2♂♂, Santa Cruz/Bolivia, 3 km W Buena Vista, 12/XII/95 (575m), D. L. PEARSON; secondary forest, Ichilo, 17°29'S, 63°41'W; 8♂♂, 5♀♀, Santa Cruz/Bolivia, 18.7 km N San Ramon, 315 m, 29/XI/95, D. BRZOSKA, Nuflo de Chavez, 15°49'S, 61°31'W; 2♂♂, Beni/Bolivia, 2.5 km E Reyes, 14°17'S, 67°18'W, D. BRZOSKA, 24/XI/96, Ballivian.

Type depositories. Holotype at Colección Boliviana de Fauna, Instituto de Ecología, Museo Nacional de Historia Natural, La Paz, Bolivia (CBFLP), paratypes at DBC, DPC, RHC and JWC.

Distribution. Bolivia: Santa Cruz (San Javier, San Ramon, Buena Vista, San Carlos), Beni (Santa Rosa, Reyes).

Etymology. This species is dedicated to Prof. Dr. David L. Pearson.



Figs 13-21: Labrum. 13. *Pentacomia cupricollis*, Dep. Guaira, Paso Yobai/Paraguay, 14/XII/90, leg. U. DRECHSEL, ♂, (JWC). 14. *P. cupricollis*, Santa Cruz/Bolivia, San Jose (309m), 30/XII/89, E. PANARANDA; scrub forest path, ♂, (DPC). 15. *P. cupricollis*, Santa Cruz/Bolivia, San Jose (309m), 30/XII/89, S. OTAZU; scrub forest path, ♀, (DPC). 16. *P. pearsoni* sp. n., Santa Cruz/Bolivia, 24 km S San Javier, 280m, 6/XII/95, D. BRZOSKA, Paratype ♂, (DPC). 17. *P. pearsoni* sp. n., Santa Cruz/Bolivia, 10 km E San Javier, 12/XII/93, D. L. PEARSON; secondary forest path, Paratype ♀, (DPC). 18. *P. brzoskai* sp. n., Santa Cruz/Bolivia, 4 km SW Pto. Suarez, 30 Dec. 1993, J. F. GUERRA; secondary forest path, Paratype ♂, (DPC). 19. *P. brzoskai* sp. n., Santa Cruz/Bolivia, 22 km W Pto. Suarez, 31/XII/93, J. F. GUERRA; secondary forest path, Paratype ♂, (DPC). 20. *P. brzoskai* sp. n., Santa Cruz/Bolivia, 15 km SW Pto. Suarez, 30/XII/93, J. F. GUERRA; secondary forest path, Paratype ♀, (DPC). 21. *P. brzoskai* sp. n., Santa Cruz/Bolivia, road to Pto. Bush, 6.1 km SW Pto. Suarez, D. BRZOSKA, 30/XII/93, Paratype ♀, (DBC). Scale: 1 mm.

Pentacomia (Poecilochila) brzoskai sp. n.

Description

Body length 9.0 to 11.4 mm, mean 10.2 mm ($n = 31$); dorsally of bright copper color, with metallic dark bluegreen along lateral margin of the elytra, at genae and between eyes; ventral and dorsal thorax bright metallic red copper except for a metallic blue line on lateral edge of pronotum; ventral abdomen metallic dark bluegreen, except for bright metallic red copper metepisternum. Mandibles brownish-black with yellow margin and 4 teeth. Labrum (Figs 18-21) with four lateral setae, yellow with or without darkened areas, in very few cases black with a yellow mark at the lateral edge. Palpi light orange, apical joint black. Coloration of antennae light orange, orange with metallic lustre, or in very few cases black. Mesepisternum of female (Fig. 12) somewhat uneven, longitudinal furrow and pit outlined. Elytra (Fig. 6) with one distinct white spot on the lateral margin of the elytral apex. Color of legs ranges from orange with or without metallic lustre to black with orange spots at apices of femora. Length of aedeagus (Fig. 9) 3.6 mm, tip slightly curved and reduced towards the apex.

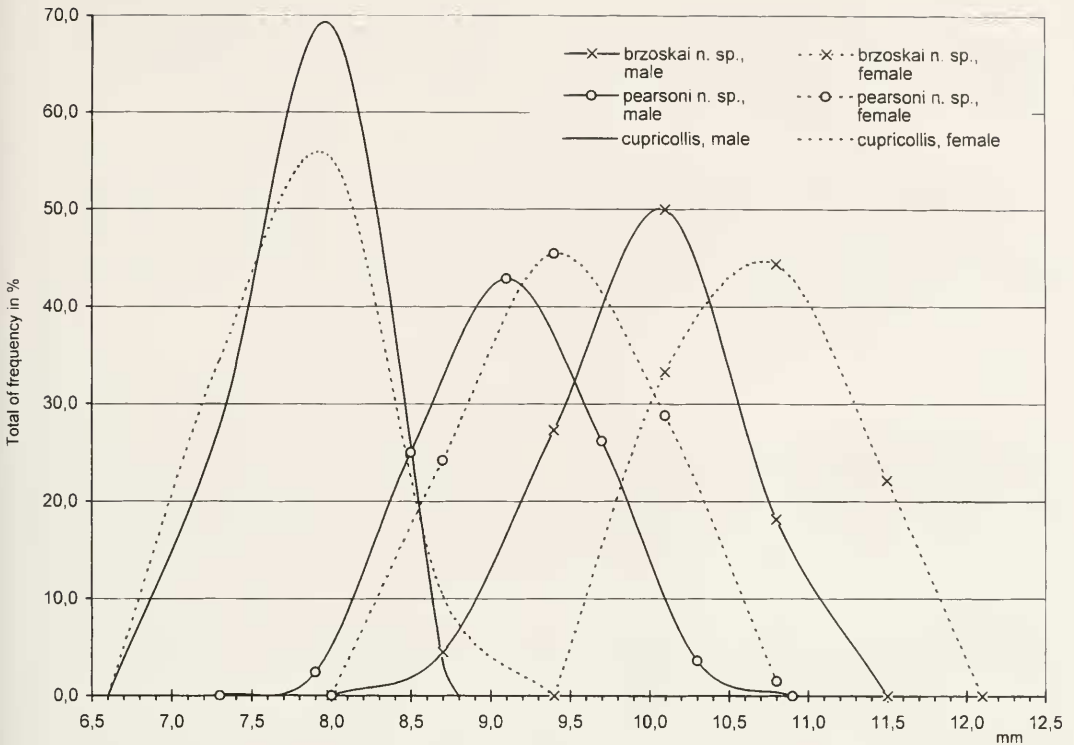


Fig 22: Frequency distributions of body length of *Pentacomia cupricollis*, *P. brzoskai* and *P. pearsoni*.

Diagnosis. The largest of the three species discussed here. The aedeagus is also the largest. The female mesepisternum has a shallow furrow with an indistinct central pit. Color of appendices is mostly darkened. Elytral maculation consists of one apical white spot only.

Holotype and type locality. Male, labelled "BOLIVIA – SANTA CRUZ, road to Pto. Bush, 6.1 km SW – Pto. Suarez, D. BRZOSKA, 30-XII-1993" [white and printed]; "HOLOTYPE, *Pentacomia (Poecilochila)*, *brzoskai*, sp. n., ded. J. WIESNER 1999" [red and printed]; Type locality: Pto. Suarez/Santa Cruz/Bolivia.

Paratypes. 30 paratypes with red printed labels "PARATYPE, *Pentacomia (Poecilochila)*, *brzoskai*, sp. n., ded. J. WIESNER 1999" and the following additional labels [white and printed]: 2♂♂, Santa Cruz/Bolivia, road to Pto. Bush, 4.4 km SW Pto. Suarez, D. BRZOSKA, 30/XII/93, German Busch; 2♂♂, 1♀, l. c., 6.1 km SW Pto. Suarez, 19°01'S, 57°46'W; 2♂♂, l. c., 15.3 km SW Pto. Suarez, 19°05'S, 57°48'W; 2♂♂, 1♀, Santa Cruz/Bolivia, 15 km SW Pto. Suarez, 30/XII/93, J. F. GUERRA; secondary forest path, German Busch, 19°00'S, 57°46'W; 2♂♂, 1♀, l. c., 6 km SW Pto. Suarez, 19°01'S, 57°46'W; 3♂♂, 2♀♀, Santa Cruz/Bolivia, 22 km NW Pto. Suarez, D. BRZOSKA, 31/XII/93, German Busch, 18°50'S, 57°52'W; 2♂♂, 2♀♀, Santa Cruz/Bolivia, 22 km W Pto. Suarez, 31/XII/93, J. F. GUERRA; secondary forest path, German Busch, 19°08'S, 57°54'W; 2♂♂, 1♀, l. c., 8 km W Pto. Suarez, 19°02'S, 57°47'W; 1♀, Santa Cruz/Bolivia, 8.5 km NW Pto. Suarez, D. BRZOSKA, 31/XII/93, German Busch.

Type depositories. Holotype at CBFPL, La Paz/Bolivia; paratypes at DBC, DPC, RHC and JWC.

Distribution. Bolivia: Santa Cruz (Pto. Suarez).

Etymology. This species is dedicated to Dr. David W. BRZOSKA.

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